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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/795,839 | 03/08/2004 | Koichi Nitta | 81788.0267 | 1265 |

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EXAMINER

LOUIE, WAI SING

ART UNIT PAPER NUMBER

2814

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/795,839

Applicant(s)

NITTA ET AL.

Examiner

Wai-Sing Louie

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 21-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/24, 1/31.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

Claims 21-28 are objected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- it is unclear what does the second silicon resin do. Are there two different silicon resins used to enclose the light-emitting element and semiconductor element? For the purpose of examination, two silicon resins are assumed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US 6,147,367) in view of Courtney et al. (US 4,160,308).

With regard to claim 21, 25, and 27, Yang et al. disclose a light-emitting device (col. 3, line 12 to col. 7, line 64 and fig. 7) comprising:

- a first lead 703 (fig. 7);
- a second lead 701 (fig. 7);

- a first semiconductor light-emitting element 702 mounted on the first lead 703 (fig. 7);
 - a semiconductor element 707 mounted on the first lead 703 (fig. 7);
 - a first wire 709 connecting the first light-emitting element 702 and second lead 701 (fig. 7);
 - a second wire 708 connecting the semiconductor element 707 and the second lead 701 (fig. 7);
 - Yang et al. do not disclose a first and second silicone resin provided to enclose the first semiconductor light-emitting element, part of the first lead, part of the second lead, and the first and second wires. The resins have hardness not lower than 50 in JISA value and different pre-curing viscosity in the range 100 to 10000 cp.
- However, Courtney et al. disclose using two kinds of silicone resin 17 and 20 to adhere and seal the light-emitting element 8 and the semiconductor element 15 (Courtney col. 4, lines 13 to 36 and fig. 5). Courtney et al. teach the silicone resin could withstand high level of applied voltage and still maintain electrical isolation (Courtney col. 1, lines 62-64); and transmit up to 95% or more light (Courtney col. 1, lines 67-68). Yang et al. and Courtney et al. have substantially the same environment of LED unit having two elements in the same package. Therefore, it would have been obvious for the one with ordinary skill in the art to modify Yang's device with the teaching of Courtney et al. to provide the silicone resins to adhere and seal the first light-emitting element 702 and second semiconductor element 707 in order to isolate the elements without absorbing emitted light. Both

Yang et al. and Courtney et al. do not disclose the hardness is not lower than 50 in JISA value and different pre-curing viscosity in the range 100 to 10000 cp. Since the applicant has not established the criticality of the hardness and viscosity stated and since these hardness and viscosity are in common use in similar devices in the art, it would have been obvious to one of ordinary skill in the art to use these values in the device. Where patentability is said to be based upon particular chosen dimension or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With regard to claim 22, Yang et al. do not disclose a third wire connecting the first light-emitting element and the first lead. However, if the first lead 10 is electrically isolated such as disclosed in Courtney et al. fig. 10. Another lead wire is needed to supply the power to semiconductor element 15. Thus, Yang et al. modified by Courtney et al. would disclose a third wire to the first light-emitting element and the (isolated) first lead, where the first lead having a slit 11 and 12 formed between a portion where the semiconductor element is mounted and a portion where the third wire 16 is connected (Courtney fig. 10).

With regard to claim 23, Yang et al. disclose the semiconductor element 707 is a second light-emitting element (fig. 7).

With regard to claim 26, Yang et al. modified by Courtney et al. would disclose the silicone resin has convex surface configuration (fig. 5).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US 6,147,367) modified by Courtney et al. (US 4,160,308) as applied to claim 21 above, and further in view of Lebby et al. (US 5,748,161).

With regard to claim 24, Yang et al. do not disclose the first and second light-emitting elements 702 and 707 emit different peak wavelengths. However, Lebby et al. disclose an integrated electro-optical display having two LED's 28 and 30 (fig. 3) and they emit different wavelengths, where the first wavelength is different than the second wavelength (col. 2, lines 48-55). Lebby et al. teach the different LED's in the display creates a multi-color images (col. 2, lines 56-60). Yang et al. and Lebby et al. have substantially the same environment of two LED's in a same package. Therefore, it would have been obvious at the time the invention was made to modify Yang's device with the teaching of Lebby et al. to have two LED's that emit different wavelengths in order to form a multi-color images.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US 6,147,367) modified by Courtney et al. (US 4,160,308) as applied to claim 21 above, and further in view of Sun et al. (US 6,867,542).

With regard to claim 28, Yang et al. modified by Courtney et al. do not disclose a fluorescent element in the silicone resin, which absorbs light emitted from the first light-emitting element and releases light of a different peak wavelength. However, Sun et al. disclose forming a layer of phosphor 38 on top of the LED 20 (Sun col. 4, lines 1-4). Sun et al. teach the phosphor acts down convert the light emitted from the LED (Sun col. 4, lines 1-4). Yang et al. and Sun et al. have substantially the same environment of LED encapsulated in the resin. Therefore, it

would have been obvious for the one with ordinary skill in the art to modify Yang's device with the teaching of Sun et al. to provide the phosphor (fluorescent) in order to convert the wavelength of light emitted by the light-emitting element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (571) 272-1709. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wsl
March 30, 2005.

